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Bobo et al.

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(54) **MODULAR PUSH-TO-CONNECT ASSEMBLY**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **15/166,477**

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(65) **Prior Publication Data**

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Related U.S. Application Data

(63) Continuation-in-part of application No. 14/564,293, filed on Dec. 9, 2014, now Pat. No. 9,447,906, and a continuation-in-part of application No. 14/564,271, filed on Dec. 9, 2014, now Pat. No. 9,541,228.

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CPC **F16L 37/0915** (2016.05)

(58) **Field of Classification Search**
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See application file for complete search history.

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(57) **ABSTRACT**

A push-to-connect modular cartridge for a plumbing fitting includes a cylindrical cup having an annular surface at one end and a cylindrical shoulder at an opposite end. A circular seal is positioned against the annular surface, and a circular backing ring is positioned against the seal on a side opposite the annular surface. A grab ring including inwardly projecting tines is seated against the backing ring on a side opposite the seal, and a containment ring contacts the grab ring on a side opposite the backing ring. The containment ring is engaged by the shoulder of the cup to hold the containment ring, grab ring, backing ring, and seal together. This modular push-to-connect cartridge can be welded to a plumbing fitting which uses significantly less material, thereby greatly reducing the cost to manufacture.

12 Claims, 9 Drawing Sheets

